



Lower Clark Fork River Drainage

MONTANA FWP



-  Tribal Lands
-  Drainage Boundary



Area of Interest



Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

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Miles

LOWER CLARK FORK RIVER DRAINAGE

PHYSICAL DESCRIPTION

The Lower Clark Fork River begins at its confluence with the Flathead River and terminates at the inlet to Lake Pend Oreille in Bonner County, Idaho. In Montana, this drainage falls almost entirely within Sanders County. The river flows for 94 miles through a drainage of 1.4 million acres before exiting the state. Elevations range between 2,191 and 8,735 feet. Approximately 83% of the land within the drainage is managed by the Lolo and Kootenai National Forests. Privately owned land is primarily confined to the valley floor and the Thompson River drainage. Primary land uses include agriculture, hydropower generation, forest products, recreation and wilderness.

There are 49 lakes or reservoirs in the drainage, totaling 14,483 surface acres. Numerous, natural headwater lakes are found at higher elevations. The largest of these lakes, Wanless Lake, lies within the Cabinet Mountains Wilderness area. The Thompson, Bull and Vermilion rivers are the largest tributaries to the lower Clark Fork River. Approximately 62 miles of the lower Clark Fork River is inundated by three dams: Thompson Falls, Noxon Rapids and Cabinet Gorge (completed in 1915, 1959 and 1952 respectively). Noxon Rapids Dam creates the largest reservoir, impounding an area of 8,000 acres at full pool, followed by Cabinet Gorge (3,000 acres) and Thompson Falls (1,000 acres).

FISHERIES MANAGEMENT

Diverse habitat types throughout the Lower Clark Fork River drainage provide numerous fishing opportunities, including warm, cool and cold-water sport fisheries and important habitat for native species. Largemouth and smallmouth bass, northern pike, yellow perch and several trout species are the primary species targeted by fishermen.

Native species within the drainage include bull trout, westslope cutthroat trout, mountain whitefish, longnose and largescale sucker, northern pikeminnow, peamouth, longnose dace, reidside shiner, and several sculpin species. Native species management is focused on salmonids with an emphasis on bull trout recovery. The lower Clark Fork River and several of its tributaries are designated as bull trout critical habitat. Bull trout in this drainage exhibit both resident and migratory life histories with some fish moving to mainstem rivers, reservoirs or Lake Pend Oreille to mature. Primary limiting factors for this species include dams (passage barriers and altered habitat), habitat degradation in tributaries, warm water temperatures, and introduced species. Currently these impacts are being partially addressed through the Avista and Northwestern Energy hydro-mitigation programs, which are required by FERC and stipulated in their operating licenses. Fish passage at Thompson Falls Dam, owned and operated by Northwestern Energy, is facilitated by a fish ladder that began operation in spring 2011. Upstream passage at Cabinet Gorge Dam, owned and operated by Avista, is facilitated by a capture and transport program that returns adult fish to their natal tributaries based on genetic assignments. Additionally, the juvenile trap and haul program captures out-migrating juvenile bull trout from tributaries and trucks them to Lake Pend Oreille. Both utilities also contribute to habitat restoration and acquisition. In the East Fork Bull River, there is continued exclusion of

nonnative species at weir traps on the lower river. Enhanced bull trout education and enforcement is also a priority of FWP and Avista.

The lower Clark Fork drainage contains numerous high elevation ponds and lakes in tributary headwaters. Many of these waters contain fish that are supported by natural reproduction or stocking. Westslope cutthroat trout are the primary species found in most of these habitats, however, some waters have historically been stocked with brook trout, rainbow trout, or Yellowstone cutthroat trout. Access to many of these lakes is by foot with a couple accessible by vehicle. Where feasible, nonnative fish may be replaced with westslope cutthroat trout to reduce threats on downstream populations of native trout, as well as increasing angler opportunity. A five-year study on fish distribution, growth, and abundance in the lower Clark Fork mountain lakes was initiated in 2016. This information will guide stocking rates and management in the future. Some lakes are intentionally left fishless to conserve amphibians and other aquatic species.

Tributaries to the Clark Fork River provide angling opportunities for trout. The Thompson River is the most popular with approximately 13,000 angler days in 2015. Other streams receive less angling days, with only the Bull River also receiving measurable pressure. All tributaries are closed to angling between November 30 and the third Saturday in May to protect spawning westslope cutthroat trout, with the exception of the lower Thompson River. Regulations on the Thompson River also prohibit the use of bait by adult anglers to reduce hooking mortality.

The Thompson River below its confluence with the Little Thompson River remains open year-round, providing fishing opportunity for whitefish and trout anglers. Trout fishing is limited to catch and release for all species between December 1 and the third Saturday in May and cutthroat and rainbow trout must be released year-round. The upper river was closed in 2000 for winter fishing to protect spawning rainbow trout; however, this species is now rare in the upper river and a new regulation may be proposed.

Riverine portions of the Clark Fork River (downstream of Flathead River confluence) provide angling opportunities for smallmouth bass and northern pike. Native suckers, minnows, and whitefish dominate this habitat. Trout are limited due to warm summer water temperatures.

Reservoirs on the lower Clark Fork River are popular warm and cool water fisheries. Yellow perch and northern pike are pursued by anglers year-round and largemouth and smallmouth bass are popular from spring through fall. Noxon Reservoir hosts up to seven bass fishing tournaments annually and currently holds the state record for largemouth bass. A recent creel survey during the open water period found that most anglers targeted either species of bass, followed by northern pike and yellow perch. Noxon also holds the state record for northern pikeminnow, although native suckers and minnows have declined dramatically in recent years in Noxon Reservoir. Introduced yellow perch and pumpkinseed have maintained high or increasing abundances and likely provide the bulk of forage for sport fish at this point. Spring walleye fishing in upper Noxon Reservoir is common during years when conditions permit.

Walleye were illegally introduced into Noxon Reservoir in the late-1980s or early-1990s and multiple introductions were reported throughout the 1990s. The population did not reach catchable numbers until the mid-2000s, at which time FWP conducted a radio telemetry project which identified a primary spawning location at the upper end of the reservoir.

FWP will continue to monitor the walleye in Noxon Reservoir through fall gillnetting and spring electrofishing. Even during years of high abundance, walleye comprise less than 5% of species captured by gillnets in Noxon Reservoir. During spring electrofishing, sampling is biased highly towards male walleye with approximately 25% of fish being female. FWP will continue to place a “no limit” regulation on walleye in Noxon Reservoir. To prevent upstream spread, FWP will continue to prohibit Northwestern Energy from operating the fish ladder at Thompson Falls Dam in volitional mode (i.e., every fish which ascends the ladder will be inspected by fisheries staff to insure no walleye pass the dam.)

Currently the lower Clark Fork has three family fishing ponds which are stocked with rainbow trout. Triangle Pond near the town of Noxon provides a quality family fishery for stocked rainbow trout and burbot. Near Trout Creek, the Frog Pond provides a fishery for stocked rainbow trout and multiple warm-water species. Finally, a recently expanded pond at Thompson Falls State Park provides a fishery for stocked rainbow trout and other warm-water species. The Frog Pond and Thompson Falls State Park Pond is stocked with triploid (sterile) rainbow trout to reduce the risk of hybridization with native trout present in the Clark Fork River.

HABITAT

Tributary habitat in the Lower Clark Fork Drainage has been shaped by numerous natural and man-caused conditions. The Thompson River is the area’s most popular stream fishery and is unique in that the lower river has colder summer water temperatures than the upper river. The headwaters of the Thompson River begin at the outlet of the Thompson Chain of Lakes and slowly meanders through a gentle landscape with sparse large vegetation. It is not until the additions of Fishtap Creek and West Fork Thompson River that the river picks up cold water, steeper gradient, and a more favorable temperature regime for native trout. The primary habitat concern in the Thompson River is the abundance of redundant road systems throughout the drainage. Grazing and timber harvest also cause localized concerns in several areas of the Thompson River.

A unique feature of many lower Clark Fork River tributaries are sections of streams which are seasonally intermittent due to coarse sediment deposits left behind by Glacial Lake Missoula. These intermittent stream reaches have partially isolated some headwater fish populations, which in some cases has resulted in entirely native species assemblages with mostly resident life histories.

Historic land use has also shaped habitat in these other tributaries. Major impacts to certain tributaries are caused by the construction and maintenance of roads, transmission lines, and petroleum pipelines, as well as mining and grazing. Localized habitat problems include sedimentation, unstable banks, simplification of habitat, and thermal impacts. Mining impacts are limited to only a couple of tributaries (including the Vermilion River) where some small-scale mine claims are still in place. Proposed copper and silver mines near the Cabinet Mountain Wilderness areas could significantly alter habitat in the Rock Creek and Bull River drainages. Current estimates suggest mining could reduce base flows in these streams by five percent.

Approximately 66% of the Lower Clark Fork River has been converted from riverine to reservoir habitat by three hydroelectric facilities. All three reservoirs are run-of-the-river and experience little thermal stratification. Reservoir draw-downs are limited to ten feet annually to benefit the

sport fisheries present. Mainstem habitat created by the dams is unfavorable for native trout due to warm water temperatures and blocked fish passage. Currently, both utilities are attempting mitigation for blocked migrations through the implementation of fish passage programs at Thompson Falls and Cabinet Gorge dams. Thompson Falls Dam was outfitted with a fish passage ladder that has been in operation since spring 2011. Bull trout passage at the Cabinet Gorge Dam is facilitated by active capture techniques and upstream transport to the fish's tributary of origin based on genetic assignment. Permanent upstream fish passage facilities (trap and haul) are currently planned for construction in 2019.

Water quality in the lower Clark Fork River is highly impacted by mercury, PCBs, and dioxin/furans (DF). Fish consumption advisories exist for many popular sport fish with large walleye and northern pike being the most restrictive. The source of the excess mercury is primarily from past mining activities upstream. The source of PCBs and DF is from an upstream pulp mill which shut down in 2010.

FISHING ACCESS

Fish, Wildlife and Parks maintains four Fishing Access Sites between the lower Flathead River and the Clark Fork River down to Thompson Falls, as well as Thompson Falls State Park. Three additional sites are located at the headwaters of the Thompson River on McGregor Lake and the Thompson Chain of Lakes. In addition to these sites, FWP works with the US Forest Service, Avista, and Northwestern Energy to provide developed access at numerous other sites throughout the drainage. Extensive road and trail systems on many tributary streams provide endless access opportunities on public land. A property on the lower Bull River acquired through the Avista's Clark Fork Settlement Agreement (CFSA) will provide public fishing access to that river in the future. There is a need to provide more public access on the Clark Fork River between Plains and Thompson Falls.

SPECIAL MANAGEMENT ISSUES

A majority of the Lower Clark Fork River is influenced by three hydroelectric dams built and operated by private utilities. Thompson Falls Dam was built in 1917 and is now operated by Northwestern Energy. In 2011, a fishway at that dam became operational with the intent of passing bull trout. Since then, the fishway has passed thousands of native and nonnative species and approximately 15 bull trout. Further downstream, Cabinet Gorge Dam (1952) and Noxon Rapids Dam (1958) are currently operated by Avista. As part of their license with the Federal Energy Regulatory Commission (FERC), Avista developed the Clark Fork Settlement Agreement (CFSA) in 1999 with 27 primary signatories representing 42 interest groups. The CFSA is a living, adaptive license to direct fisheries and wildlife mitigation for the facilities. The Native Salmonid Restoration Plan (NSRP) aimed at the restoration of bull trout, westslope cutthroat trout, and mountain whitefish is a major part of the CFSA. Mitigation activities have included habitat acquisition and restoration, access and recreational use development, and a trap and haul program for both juvenile and adult bull trout to provide connectivity to Lake Pend Oreille. Development of a permanent fish capture facility at Cabinet Gorge Dam is slated to begin within the next two years. Currently, native fish which are trucked around the dam are captured by electrofishing.

Rock Creek Mine

A major copper and silver mine is proposed in the Rock Creek drainage. The mine would develop adits that would run beneath the Cabinet Mountains Wilderness area and would include portals in the West Fork of Rock Creek with a tailings facility near the mouth of Rock Creek. The mine is still undergoing environmental review and permitting. Potential negative impacts would be decreased groundwater inputs in both the Rock Creek and the Bull River drainages as well as impacts to water levels in mountain lakes above the adits. Increased road usage and maintenance in the West Fork Rock Creek will certainly have negative impacts on that tributary as well. Disturbance from mine development and ore removal along with tailings and wastewater disposal is expected to impact Rock Creek and possibly the Lower Clark Fork River from Noxon Rapids Reservoir downstream.

FISHERIES MANAGEMENT DIRECTION FOR LOWER CLARK FORK RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Lower Clark Fork River - Confluence with Flathead River to Idaho Border	94 miles	Bull trout (N)	Wild	Conservation	Continue to monitor population trends. Using trap and haul program, reestablish fish connectivity. Continue yearlong closure on angling for bull trout.
		All other species	Wild	General	Continue to monitor distribution and status throughout the drainage.
Habitat needs and activities: Monitor drainage for potential habitat threats and restoration opportunities.					
Thompson Falls Reservoir	969 acres	Bull trout (N)	Wild	Conservation	Continue to operate fishway at Thompson Falls Dam. Continue yearlong closure on angling for bull trout.
		All other species	Wild	General	Continue to monitor population trends.
McGregor Lake	1,522 acres	Lake trout	Wild	General	Manage harvest to support angling opportunity while reducing numbers to improve size and benefit other put and take fisheries.
		Rainbow trout	Hatchery	Put, Grow and Take	Provide harvest and recreational opportunity for occasional 1-3 pound rainbows. Continue to boat stock year-old trout throughout the lake to minimize predation by lake trout.
		Kokanee salmon	Hatchery	Put, Grow and Take	Provide quality harvest and recreational opportunity for occasional salmon up to 15". Identify if continued stocking is warranted based on predatory lake trout population.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Smallmouth bass	Wild	Suppression	Illegal introduction. Provide liberal harvest and if feasible eliminate population to promote local rainbow fishery and protect native crayfish population.
Little McGregor Lake	33 acres	Rainbow trout	Hatchery	Put, Grow and Take	Provide quality harvest and recreational opportunity for 1+ pound rainbows. Identify if stocking is warranted based on competition with stunted yellow perch population.
		Yellow perch	Wild	General	Provide for harvest of at least 8" length yellow perch. Monitor population structure to determine if quality perch population can be sustained or if lake should be rehabilitated for salmonids.
Upper Thompson Lake	294 acres	Northern pike	Wild	General	Continue to provide for liberal harvest including spearing to provide for recreational opportunity and decrease predation on Put and take fisheries and yellow perch.
		Yellow perch	Wild	General	Maintain recreational angling and harvest opportunity
		Largemouth bass	Wild	General	Maintain recreational angling and harvest opportunity. Through regulation, enhance opportunity for spawning size bass (>14").
		Smallmouth bass, Black crappie	Wild	Suppression	Illegal introduction. Provide liberal harvest and if feasible eliminate population to help protect kokanee fishery and largemouth bass population.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Middle Thompson Lake	557 acres	Northern pike	Wild	General	Continue to provide for liberal harvest including spearing to provide for recreational opportunity and decrease predation on put and take fisheries and yellow perch.
		Rainbow trout	Hatchery	Put, Grow and Take	Identify if continued stocking is warranted based on predator populations of northern pike and bass.
		Kokanee salmon	Hatchery/ Wild	Put, Grow and Take/ Restrictive Regulations	Maintain regulations that promote protection of naturally reproducing population with opportunity for larger kokanee. Continue to monitor contribution to population of hatchery versus wild kokanee. Identify if stocking is warranted based on predator populations of northern pike and bass.
		Yellow perch	Wild	General	Maintain recreational angling and harvest opportunity.
		Largemouth bass	Wild	General	Maintain recreational angling and harvest opportunity. Through regulation, enhance opportunity for spawning size bass (>14”).
		Smallmouth bass, Black crappie	Wild	Suppression	Illegal introduction. Provide liberal harvest and if feasible eliminate population to help protect kokanee fishery and largemouth bass population.
Habitat needs and activities: Monitor perched culvert between Middle Thompson Lake and Upper Thompson Lake for obstruction to fish movement. Identify if replacement is necessary.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Lower Thompson Lake	240 acres	Northern pike	Wild	Wild	Continue to provide for liberal harvest including spearing to provide for recreational opportunity and decrease predation on put and take fisheries and yellow perch.
		Rainbow trout	Hatchery	Put, Grow and Take	Identify if continued stocking is warranted based on predator populations of northern pike and largemouth bass.
		Kokanee salmon	Hatchery/ Wild	Put, Grow and Take/ Restrictive Regulations	Maintain regulations that promote protection of naturally reproducing population with opportunity for larger kokanee. Monitor contribution to population of hatchery versus wild kokanee. Identify if continued stocking is warranted based on predator populations of northern pike and bass.
		Yellow Perch	Wild	General	Maintain recreational angling and harvest opportunity.
		Largemouth bass	Wild/ Hatchery	General/ Put, Grow and Take	Maintain recreational angling and harvest opportunity. Through regulation, enhance opportunity for spawning size bass (>14"). Monitor contribution to population of hatchery versus wild bass. Identify if continued stocking is warranted.
		Smallmouth bass, Black crappie	Wild	Suppression	Illegal introduction. Provide liberal harvest and if feasible eliminate population to help protect kokanee fishery and largemouth bass population.

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Thompson River	55 miles	Bull trout (N), Westslope cutthroat trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends and migration patterns of fish with remote PIT arrays. Continue yearlong closure on angling for bull trout. Continue upstream bull trout transport program for fish from below Cabinet Gorge Dam. Assess habitat conditions and look for opportunities for improvement. Continue to prohibit bait fishing (anglers over 14) to reduce hooking mortality.
		Rainbow trout	Wild	Restrictive Regulations	Continue to manage harvest to provide angling opportunity for larger trout with restrictive regulations and minimize impacts on native fish. Evaluate effectiveness of restrictive regulations.
		Brown trout	Wild	General	Continue to allow liberal harvest and seek opportunities for extended fishing season on upper river.
		Mountain whitefish (N), Brook trout	Wild	General	Continue with general western district harvest regulations of mountain whitefish and brook trout.
Habitat needs and activities: Decrease sedimentation and stream bank instability through instream and riparian habitat restoration. Investigate causes of elevated water temperatures and restore if possible.					
Little Thompson River	20.3 miles	Westslope cutthroat trout (N)	Wild	General	Continue to monitor distribution and status throughout the drainage. Identify habitat restoration projects which may improve water quality and temperature to benefit wild cutthroat trout populations.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Brook trout	Wild	General	Maintain liberal regulations. Determine areas where brook trout may be excluded or removed.
Habitat needs and activities: Identify leading causes of habitat degradation and determine if restoration would benefit bull trout.					
Fishtrap Creek	27.5 miles	Bull trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends. Continue yearlong closure on angling for bull trout. Continue to prohibit bait fishing to reduce hooking mortality. Assess habitat conditions and look for opportunities for improvement.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage. Continue to limit harvest.
		Rainbow trout, Brown trout, Brook trout	Wild	General	Monitor distribution of these species and determine ways to prevent advancement into important bull and cutthroat trout spawning and rearing areas.
Habitat needs and activities: Assess habitat and hydrologic conditions. Restore habitat where necessary.					
Prospect Creek	77.6 miles	Bull trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends. Continue yearlong closure on angling for bull trout. Assess habitat conditions and look for opportunities for improvement.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Rainbow trout, Brook trout, Brown trout	Wild	General	Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into bull and cutthroat trout spawning and rearing areas. Continue to monitor effectiveness of the Blossom Lakes brook trout removal in the upper drainage.
Habitat needs and activities: Develop a working group to identify potential habitat restoration and mitigation projects. Restore habitat degraded by land use, roads, pipelines and power lines. Continue to monitor previously conducted habitat restorations.					
Graves Creek	19.2 Miles	Bull trout (N)	Wild/ Transport	Conservation	Continue to monitor distribution and status throughout the drainage. Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into important bull and cutthroat trout spawning and rearing areas.
		Westslope cutthroat trout (N),	Wild	Conservation	
		Rainbow trout, Brown trout, Brook trout	Wild	General	
Habitat needs and activities: Monitor drainage for potential habitat threats and restoration opportunities.					
Vermilion River	43.2 Miles	Bull trout (N)	Wild/ Transport	Conservation	Continue to monitor population trends. Continue downstream and upstream bull trout transport program. Continue yearlong closure on angling for bull trout. Assess habitat conditions and look for opportunities for improvement.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Rainbow trout, Brown trout, Brook trout	Wild	General	Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into bull and cutthroat trout spawning and rearing areas.
Habitat needs and activities: Continue to reduce sediment sources by stabilizing stream banks and repairing riparian habitat.					
Noxon Rapids Reservoir	7,940 Acres	Bull trout (N)	Wild	Native	Administer Montana portion of Avista fisheries mitigation program. Continue yearlong closure on angling for bull trout.
		Walleye	Wild	Suppression/ Liberal Regulations	Continue to monitor this species through spring and fall sampling. Maintain “no-limit” regulation for angler harvest.
		Largemouth bass, Smallmouth bass	Wild	General/ Restrictive Regulations	Maintain later spawning-time restriction to protect spawning bass. Continue to monitor/permit 2-3 bass tournaments per year.
		All other species	Wild	General	Continue to monitor population trends.
Trout Creek	30.2 Miles	Bull trout (N)	Wild	Conservation	Continue to monitor population trends. Continue yearlong closure on angling for bull trout. Assess habitat conditions and look for opportunities for improvement.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage.
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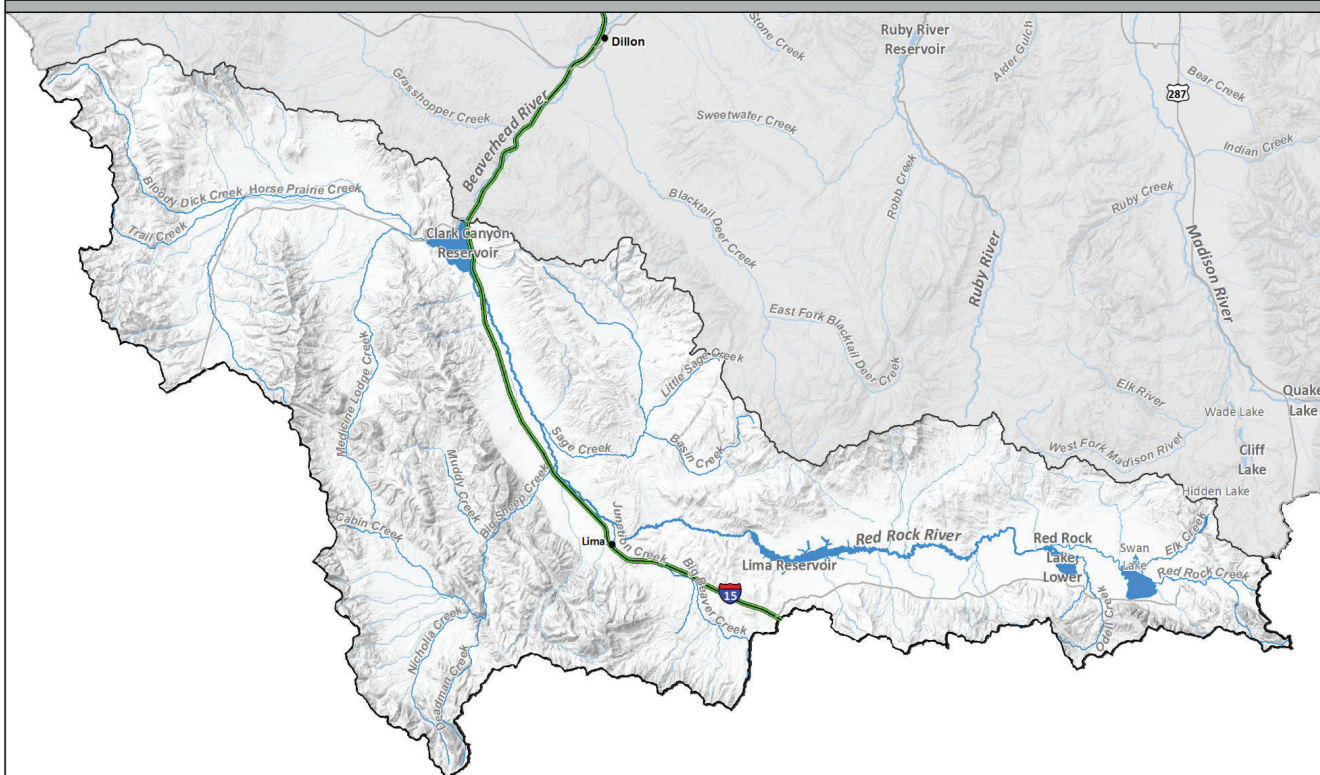
Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Rainbow trout, Brown trout, Brook trout	Wild	General	Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into bull and cutthroat trout spawning and rearing areas.
Habitat needs and activities: Monitor drainage for potential habitat threats and restoration opportunities.					
Swamp Creek	16.6 Miles	Bull trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends. Continue upstream bull trout transport program. Continue yearlong closure on angling for bull trout.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage.
		Rainbow trout, Brown trout, Brook trout	Wild	General	Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into bull and cutthroat trout spawning and rearing areas.
Habitat needs and activities: Monitor drainage for potential habitat threats. Restore degraded habitat identified in the USFS watershed assessment.					
Rock Creek	17 Miles	Bull trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends. Continue upstream bull trout transport program. Continue yearlong closure on angling for bull trout.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue to monitor distribution and status throughout the drainage. Work with partners to minimize effects of reduced base flows and habitat impacts associated with proposed mines in the headwaters.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Rainbow trout, Brown trout, Brook trout	Wild	General	Continue to monitor distribution and status throughout the drainage and determine ways to prevent advancement into bull and cutthroat trout spawning and rearing areas.
Habitat needs and activities: Monitor drainage for potential habitat threats and restoration opportunities with potential mine development.					
Cabinet Gorge Reservoir	3,200 Acres	Bull trout (N)	Wild	Conservation	Assess habitat use, survivorship and limiting factors of reservoir reared fish. Establish adult bull trout passage past Cabinet Gorge Dam through a trap and transport program. Administer Montana portion of Avista fisheries mitigation program. Continue yearlong closure on angling for bull trout.
		Westslope cutthroat trout (N)	Wild	Conservation	Work with Idaho Fish and Game Department and Avista to continue passage of westslope cutthroat from Lake Pend Oreille into Cabinet Gorge Reservoir.
		Largemouth bass,	Wild	General/ Restrictive Regulations	Maintain later spawning-time restriction to protect spawning bass.
		All other species	Wild	General	Continue to monitor population trends.
Bull River	71.6 miles	Bull trout (N)	Wild/ Transfer	Conservation	Continue to monitor population trends. Continue downstream and upstream bull trout transport program. Continue yearlong closure on angling for bull trout.
		Westslope cutthroat trout	Wild/ Transfer	General	Assess the recreational contribution of cutthroat trout passage over Cabinet Gorge Dam on the Bull River fishery. Continue to improve angling access to the Bull River.
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Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		All other species	Wild	General	Continue to monitor distribution and status throughout the drainage. Continue to exclude introduced salmonids (rainbow, brown, brook trout) from the East Fork Bull River.
Habitat needs and activities: Continue to restore degraded habitat identified in the Bull River Watershed Assessment. Monitor potential mine impacts. Assess potential to improve recreational access.					
Mountain Lakes	1,112 acres total	Westslope cutthroat trout (N)	Wild/ Hatchery	Put, Grow and Take/ General	Utilize data collected during complete census of Mountain Lakes (to be completed by 2021) to adjust stocking rates, assess threats to native species, and determine areas of natural reproduction.
		Brook Trout	Wild	General	Survey mountain lakes to determine distribution and status of wild populations, identify populations that can be managed or where removal may be necessary if impacts to native fish are inevitable.
Other Clark Fork Tributary Streams	1,214 miles	All	Wild	General	Survey previously un-sampled creeks to determine the distribution and status of the fish. Monitor previously surveyed populations. Determine connection to and contribution to Clark Fork River fisheries.
Habitat needs and activities: Protect sections of high quality habitat where necessary and restore habitat when beneficial to native species.					

Red Rock River Drainage

MONTANA FWP



 Drainage Boundary



Area of Interest



Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

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Miles

RED ROCK RIVER DRAINAGE

PHYSICAL DESCRIPTION

The Red Rock River originates in the Centennial Valley and flows west through Upper and Lower Red Rock Lakes and then to Lima Reservoir. Major tributaries of the Red Rock River include Big Sheep Creek and Horse Prairie Creek. The Red Rock River drains an area of 1,580 square miles, about half of which lies on the mountain slopes of the Continental Divide. There are 23 lakes or reservoirs within the drainage, totaling 14,939 surface acres. Clark Canyon is the largest reservoir in the drainage at 4,815 acres.

The Centennial Valley occurs primarily at over 6,000 ft of elevation and remains one of the least inhabited large high valleys in the state of Montana. The Centennial Mountains rise abruptly, about 3,000 ft above the valley floor to form the Continental Divide and the valley's southern boundary. The northern boundary is formed by the gently rounded sagebrush covered hills of the Gravelly Range. The Centennial Valley hosts the longest winters in the nation, excluding Alaska. Snowfall averages over 138 inches annually and frost can occur in every month of the year. Annual precipitation averages around 19 inches. The timbered slopes and rocky basins of the area capture the heavy winter snows and provide a constant supply of water for the 14,000 acres of lakes, marshes, and streams within the valley. The Valley is about 50 miles long and 7 miles wide and is drained by the Red Rock River which flows into Lima Reservoir to the west. Elevation at the headwaters of Red Rock Creek is approximately 8,100 feet and constitutes the upstream most headwaters of the Missouri River. Two large shallow lakes, Upper (2,206 acres) and Lower (1,126 acres) Red Rock lakes, dominate the valley floor in the Centennial Valley. Both lakes have uniform, shallow (< 6 ft) basins with aquatic vegetation throughout bottoms of mud, peat, and detritus. Elk Lake, which is 207 acres and about 60 feet deep, occurs in the northeast corner of the valley at 6,750 feet in elevation. Several other small lakes and reservoirs occur throughout the mountain ranges bounding the valley. Four major streams, Red Rock, Elk, Tom, and O'Dell creek occur upstream of the Red Rock Lakes. The Red Rock River begins as the outlet of Lower Red Rock Lake. In addition, many small mountain and spring fed streams occur throughout the Centennial Valley.

The Red Rock leaves the valley at about 6,450 feet in elevation. Lima Reservoir is a 6,800 acre irrigation storage facility built in 1902. From Lima Dam, the river flows an additional 57.4 miles in a northwesterly direction through agricultural and grazing lands before discharging into Clark Canyon Reservoir. It is joined by its largest tributary, Big Sheep Creek, near the town of Dell.

Horse Prairie Creek, and its primary tributary Medicine Lodge Creek, drain the eastern slope of the Continental Divide to the west of Clark Canyon Reservoir. Elevations range from 10,200 feet at Jeff Davis peak to 5,578 feet at Clark Canyon Dam. The drainage is comprised of many miles of relatively small streams and four mountain lakes.

Clark Canyon Reservoir is a 4,900 acre irrigation impoundment that was built in 1964. Prior to construction of Clark Canyon Reservoir, the Red Rock River and Horse Prairie Creek converged to form the Beaverhead River.

FISHERIES MANAGEMENT

Fish communities in the Red Rock River basin downstream from Lima Reservoir are common to Southwestern Montana. These species include: rainbow trout, brown trout, brook trout, hybrid westslope cutthroat trout, westslope cutthroat trout (primarily in isolated tributaries), mountain whitefish, common carp, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker.

Native fish species that occur in the Centennial Valley include Arctic grayling, lake trout, westslope cutthroat trout, burbot, mountain whitefish, white sucker, longnose sucker, longnose dace, and sculpin. Nonnative species include brook trout, Yellowstone cutthroat trout, rainbow trout, and Utah chub.

Fisheries in the Centennial Valley are managed primarily for conservation and recreational angling of native species. Where nonnative species occur, they are managed as recreational fisheries. The Red Rocks National Wildlife Refuge, which was established in 1935 for trumpeter swan conservation, occupies over 39,000 acres in the eastern part of the valley. Stream and lakes that occur there are co-managed with the Refuge to ensure that their fisheries and wildlife goals and mandates are met. The remainder of the valley is private, BLM, and DNRC lands, much of which is managed primarily for cattle grazing.

Fish stocking in the Red Rock River basin occurred between the 1930s and 1970s when wild trout management philosophies were instituted. Typical species stocked included cutthroat trout, rainbow trout, and brown trout. Upstream from Lima Reservoir, documentation of historical stocking is limited, showing only one stocking of rainbow trout in 1959. Yellowstone cutthroat trout were also stocked into the Red Rock River drainage upstream from Lima reservoir; however, official records are limited to stocking that occurred once in 1936 of undesignated cutthroat trout. Like many waters in Montana, complete stocking records do not exist, and stocking likely occurred frequently prior to the 1930s.

Elk Lake was historically stocked with rainbow and Yellowstone cutthroat trout and is presently stocked with westslope cutthroat trout. In recent years, Arctic grayling have been re-established by stocking in support of conservation actions. Restoration of flow and habitat to a previously disconnected spawning tributary is being undertaken to attempt to create self-sustaining Arctic grayling and westslope cutthroat trout populations.

Fishing regulations throughout the Red Rock River basin follow Central District Standard regulations with a few exceptions. In the Red Rock River downstream from Lima Reservoir, harvest rates are reduced for Combined Trout (3 daily and in possession, only 1 over 18 inches). Arctic grayling are protected by catch-and release regulations throughout the basin, and lake trout are protected by catch-and-release regulations in Elk Lake.

The combined trout harvest limit in Clark Canyon Reservoir is three daily and in possession. Burbot harvest regulations are also exceptions to the Central District Standard regulation allowing only three burbot daily and in possession and only 1 over 28 inches. Both regulations are directed at maintaining high size structure to the trout and burbot populations within the reservoir.

Angling is currently not allowed in either Upper or Lower Red Rock Lakes. Otherwise, with the exception of Clark Canyon Reservoir, angler use of waters within the Red Rock River basin is low. Elk Lake has the highest angler use relative to the size of the water (207 acres), with effort approaching 2,000 angler days in 2009. Over the past decade, angling pressure on Clark Canyon Reservoir has varied from 15,837 angler days in 2015 to 37,709 angler days in 2009. Total use by non-resident anglers has varied from 7 to 42 percent of all angler days over the last decade.

Twenty-three mountain lakes exist within the Red Rock River drainage that are managed as trout fisheries. Management of these lakes varies from periodic hatchery stocking to wild self-sustaining fisheries.

HABITAT

The Red Rock River upstream from Lima Reservoir is a low gradient stream, flowing for 29.3 miles through open sagebrush country within the Centennial Valley. In the Centennial Valley, the river has a sand-gravel bottom that is covered in vast areas with accumulations of silt. The narrow riparian zone is vegetated with sedges, grasses and clumps of willow. Over half of this reach passes through parcels of public land controlled by the BLM, State of Montana, and FWS. The summer grazing of livestock is the major land use along this stretch of the Red Rock River.

Between Lima Dam and Clark Canyon Reservoir, the Red Rock River flows for 57.4 miles through privately owned valley lands, primarily used for hay production and the wintering of cattle. The river width averages about 45 feet at low flow, and the substrate is comprised of gravel-cobble with some silt deposition in the slower moving waters. The narrow riparian zone is primarily vegetated with grasses, willows, alders and cottonwoods. Approximately 35,000 acres of land is irrigated within this reach of river. Stream dewatering can be severe in this reach of the Red Rock River, with flow ceasing for several days at a time within short stretches of river. Wintering cattle have damaged the stream banks along portions of the reach, creating raw and eroding banks.

A USGS gage was operated from 1936 through 1967 at river mile 10.4. The mean annual flow for the six complete years of record (1937-1942) was 93.6 cfs. For the remaining period of operation, only non-winter flows were recorded. Non-winter monthly mean flows varied from 47.1 cfs in September to 408 cfs in May. Water to irrigate about 6,000 acres is diverted upstream from this historic gage.

FISHING ACCESS

No FWP Fishing Access Sites exist within the Red Rock River Basin, but public lands generally provide adequate access to waters within the basin.

SPECIAL MANAGEMENT ISSUES

In 2007, Montana Fish, Wildlife & Parks, and partners (BLM, USFWS, USFS, Montana Council Trout Unlimited, Montana Chapter American Fisheries Society, Yellowstone National Park, Montana Arctic Grayling Recovery Program, NRCS, and DNRC) all cosigned a Memorandum of Understanding (MOU) concerning Montana Arctic Grayling Conservation. This MOU defines responsibilities and procedures agreed to by all signatory agencies conserving conservation actions to benefit Arctic grayling in Montana.

The Red Rock River drainage is also home to several conservation populations of westslope cutthroat trout providing opportunities to conserve this native species in the drainage. The long-term goal of cutthroat conservation in the Red Rock is to have approximately 20% of the historically occupied habitat restored to secure conservation populations of cutthroat trout (see Part 1: Trout: Westslope and Yellowstone Cutthroat Trout for details).

FISHERIES MANAGEMENT DIRECTION FOR RED ROCK RIVER DRAINAGE

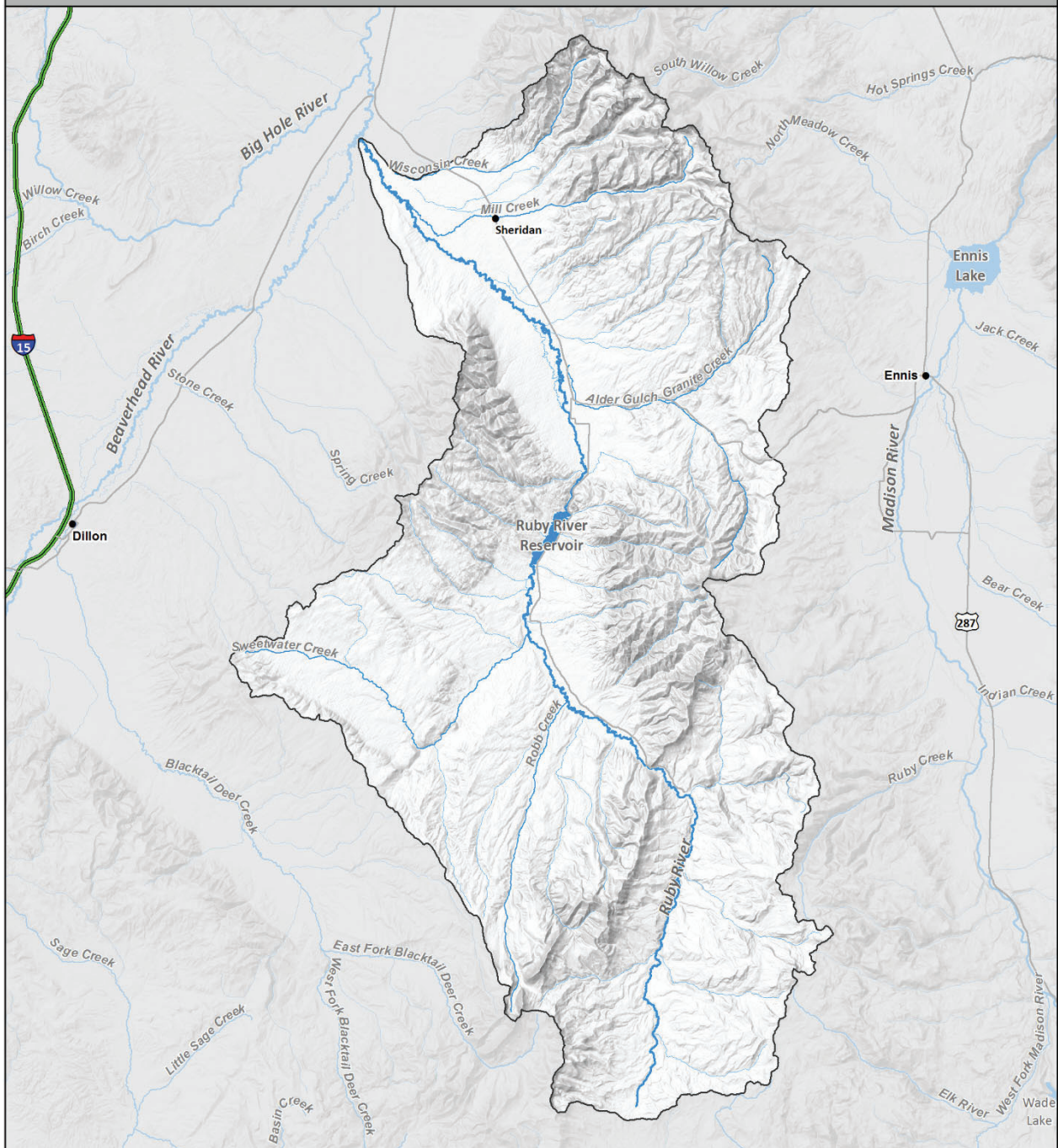
Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Elk Lake	207 acres	Lake trout (N)	Wild	Conservation	Continue native species conservation to maintain a viable, self-sustaining population.
		Burbot (N)	Wild	General	Continue to manage fish density through angler harvest to maintain fish growth.
		Arctic grayling (N)	Wild/ Hatchery	Conservation	Continue native species conservation to maintain or create a viable, genetically unaltered, self-sustaining population and, secondarily, to provide angling opportunity. Augment population as necessary to maintain viability and genetic diversity.
		Westslope cutthroat trout (N)	Wild/ Hatchery	General	Continue to manage stocking and harvest to maintain fish growth. Augment population as necessary to maintain viability and genetic diversity.
Habitat needs and activities: Restore and maintain suitable spawning tributary habitats.					
Red Rock Creek	26 miles	Arctic grayling (N)	Wild	Conservation	Continue native species conservation to maintain viable, genetically unaltered, self-sustaining populations.
		Yellowstone cutthroat trout, Brook trout	Wild	Liberal Regulations/ General	Continue to manage to minimize potential impact on viability of Arctic grayling and secondarily for recreational angling.
Habitat needs and activities: Implement management alternatives as prescribed by the Centennial Valley Artic Grayling Adaptive Management Plan.					
Centennial Valley Streams		Arctic grayling (N), Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain or create viable, genetically unaltered, self-sustaining populations.
Continue next page					



Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
		Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish	Wild	General	Continue to manage fish density through angler harvest to maintain fish growth and, in some instances, to ensure they are not limiting the viability of westslope cutthroat trout populations.
Habitat needs and activities: Implement Centennial Valley Arctic Grayling CCAA to address habitat-related threats to grayling persistence on private lands. Secure and replicate extant genetically unaltered westslope cutthroat trout populations and create meta-populations of westslope cutthroat trout in accordance with existing conservation plans. Initiate localized and watershed-scale restoration projects to address stressors and limiting factors. Develop instream flow improvements and plans in areas of need.					
Red Rock River	79 miles	Brown trout, Rainbow trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes.
Lima Reservoir	4,422 acres	Hybridized cutthroat trout, Burbot (N)	Wild	General	Maintain present numbers and sizes.
		Arctic grayling (N)	Wild	Conservation	Continue native species conservation to maintain viable, genetically unaltered, self-sustaining populations.
Clark Canyon Reservoir	4,815 acres	Rainbow trout	Hatchery	Put and Take/ Quality	Continue to manage stocking and harvest to support quality angling opportunity for larger fish.
		Brown trout	Wild	General	Maintain present numbers and sizes.
		Burbot (N)	Wild	Restrictive Regulations	Manage harvest to support quality angling opportunity for larger fish.
Habitat needs and activities: Develop and implement a reservoir management plan that, in conjunction with flow management in the Beaverhead River, optimizes fisheries benefits and irrigation needs. Pursue development and implementation of alternatives that reduce likelihood of reservoir destabilization and resuspension of fine sediment. Evaluate the performance of stocking strains and wild recruitment to determine importance of tributary spawning habitat.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Mountain Lakes	23 lakes and 148 acres	Westslope cutthroat trout, Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout	Wild/Hatchery	Put and Take/General	Continue to manage stocking and harvest to maintain fish growth

Ruby River Drainage

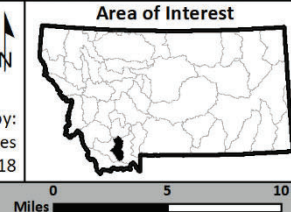
MONTANA FWP



-  Tribal Lands
-  Drainage Boundary

Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI



RUBY RIVER DRAINAGE

PHYSICAL DESCRIPTION

The Ruby River arises from tributaries (its East, West and Middle Forks) located in the Gravelly and Snowcrest mountains of Southwest Montana and flows in a northwesterly direction for 41 miles through a narrow valley to Ruby Reservoir. Ruby Reservoir, built in 1939, is used for the storage of irrigation water. Downstream from Ruby Dam, the river meanders for approximately 48 miles through an agricultural valley to its confluence with the Beaverhead River. The river drains an area of approximately 935 square miles.

FISHERIES MANAGEMENT

The Ruby River basin contains fish species common to Southwestern Montana. These species include: rainbow trout, brown trout, brook trout, hybrid westslope cutthroat trout, westslope cutthroat trout (primarily in isolated tributaries), mountain whitefish, Arctic grayling, common carp, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker. Arctic grayling are historically native to the drainage, but were extirpated. Beginning in the early 2000s, Arctic grayling were restored to the headwater reaches of the Ruby River basin. As of 2018, ten years of natural reproduction had been documented, indicating that the population is self-sustaining.

Although the Ruby River basin was historically stocked with hatchery fish, stocking in the rivers and streams was discontinued by the early 1970s, and wild trout management philosophies were initiated. Ruby River Reservoir has been stocked since 1940, primarily with rainbow trout. Yellowstone cutthroat trout were stocked in 1980 through 1983. During most years since 1940, annual stocking of rainbow trout has occurred.

The Ruby River is managed under the Central District Standard regulations for the entire river. Upstream from Ruby Reservoir in the mainstem Ruby River, harvest of cutthroat trout is allowed as part of the combined trout limit, as most cutthroat trout within this section are hybridized with rainbow trout. Ruby Reservoir is managed under Central District Standard regulations with no exceptions.

The majority of river angling on the Ruby River occurs downstream from Ruby Dam. Since 2001, total angler effort on the Ruby River from the mouth to Ruby Dam has exceeded 9,000 angler days (over 14,000 in 2007 and 2009). Angler effort upstream of Ruby Dam is approximately 10% of the levels observed downstream from the dam. The number of angler days per year for Ruby Reservoir has varied between 5,600 and 12,397 between 2001 and 2009.

Conservation populations of westslope cutthroat trout exist in some Ruby River tributaries and are managed as catch-and-release fisheries. Arctic grayling in the Ruby River are also protected from harvest with catch-and-release regulations.

Nine mountain lakes exist within the Ruby River basin that are managed as trout fisheries. Management of these lakes varies from periodic hatchery stocking to wild self-sustaining fisheries.

HABITAT

The upper Ruby River valley has a broad floodplain bounded on the west by the steep, mountainous Snowcrest Range and on the east by the gentler, rolling Gravelly Range. Elevations in the upper valley range from 5,900 to 10,500 feet. Lands within the 538 square mile upper drainage are primarily controlled by the USFS and the BLM. Average gradient of the 50-foot wide river channel is fairly constant at 7 feet/1,000 feet.

The upper drainage is comprised of 61% grassland, 12% forest, and 13% subalpine grassland, 12% noncommercial timber and 2% wet meadow and willow bottom. Riparian plant species are primarily willow, alder, birch and grasses and sedges.

The soils of the upper Ruby River valley are highly susceptible to erosion and mass wasting. The overgrazing of these areas in the late 1800s resulted in the formation of extensive rills and gullies. A riparian zone survey conducted in 1976 identified 621 sites with bank instability on the upper 14 miles of river. Livestock and livestock activities were the apparent cause at 46% of these sites.

The deposition of extremely fine sediments in the main river as well as the major tributaries in the upper drainage has the potential to affect trout food production and trout eggs. Due to severe sediment deposition, the inter-gravel water permeability in most trout spawning areas is below the level needed for good survival of trout eggs.

Downstream from Ruby River Reservoir, the Ruby River meanders for 47.9 miles through private grazing and irrigated hay lands within the wide, open Ruby Valley. Channel and bank alterations are common within this stretch. As of 1973, a total of 280 river bank and 53 channel alterations were documented. These projects comprised 17 and 8 percent of the reach length, respectively.

A major habitat concern in the lower Ruby River is excessive sedimentation. Land use of the upper drainage, coupled with the fragile soil types of the area have resulted in erosion problems and the accumulations of vast sediment deposits in Ruby Reservoir. During periods of extreme drawdown, the discharge from Ruby Reservoir is excessively turbid. This is attributed to bottom sediments being drawn into suspension by currents generated on the reservoir floor. Stream incision has further aggravated the sediment problem downstream from Ruby Reservoir.

Dewatering of the Ruby River downstream from Ruby Reservoir is a serious habitat issue. When water is stored in Ruby Reservoir during the winter months, flows downstream from the dam are greatly reduced. Portions of the river are also subject to severe dewatering during the summer irrigation season. During the droughts of 1985 and 1987, stretches of the Ruby River downstream from the reservoir were totally dewatered, causing major fish kills.

FISHING ACCESS

Five fishing access sites are located on the Ruby River. These sites are located from the Ruby Dam downstream.

SPECIAL MANAGEMENT ISSUES

In 2007, Montana Fish, Wildlife & Parks and partners (the BLM, USFWS, USFS, Montana Council Trout Unlimited, Montana Chapter American Fisheries Society, Yellowstone National Park, Montana Arctic Grayling Recovery Program, NRCS, and DNRC) all cosigned a Memorandum of Understanding (MOU) concerning Montana Arctic Grayling Conservation. This MOU defines responsibilities and procedures agreed to by all signatory agencies conserving conservation actions to benefit Arctic grayling in Montana (including the Ruby River).

The Ruby River drainage is also home to several conservation populations of westslope cutthroat trout providing opportunities to conserve this native species in the drainage. The long-term goal of cutthroat conservation in the Ruby is to have approximately 20% of the historically occupied habitat restored to secure conservation populations of cutthroat trout (see Part 1: Trout: Westslope and Yellowstone Cutthroat Trout for details).

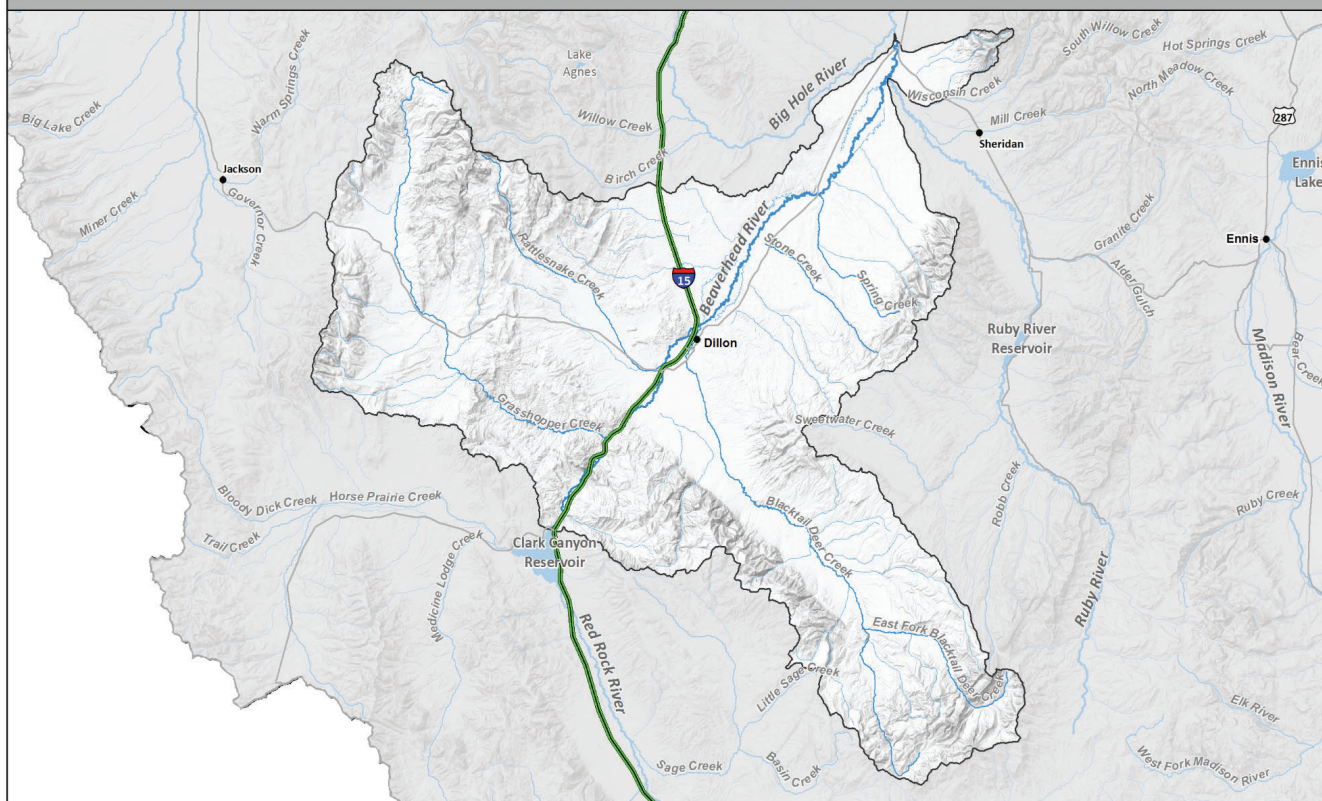
FISHERIES MANAGEMENT DIRECTION FOR RUBY RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Ruby River Upstream of Ruby Reservoir	48.2 miles	Arctic grayling (N)	Wild	Conservation	Continue native species conservation to maintain viable, self-sustaining populations.
		Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes.
Ruby Reservoir	943 acres	Rainbow trout	Hatchery	Put, Grow and Take	Continue to manage stocking and harvest to minimize density dependent reductions in fish growth.
		Brown trout	Wild	General	Maintain present numbers and sizes.
Habitat needs and activities: Maintain reservoir elevations in accordance with existing management plan. Model relationships between fish planting success and reservoir spilling duration, volume, etc. to develop the most effective stocking strategies.					
Ruby River Downstream of Ruby Reservoir	45.5 miles	Rainbow trout, Brown trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Work with water users to optimize flows and temperatures to meet population goals.
Habitat needs and activities: Maintain instream flow in accordance with existing flow management plans. Determine whether changes in reservoir management will improve the quality of the downstream fishery. Initiate localized and watershed-scale restoration projects to achieve TMDL compliance on 303d listed streams.					
Ruby River Tributaries	342 miles	Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain or create viable, genetically unaltered, self-sustaining populations.
		Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Consider increasing harvest to reduce numbers if necessary to maintain fish growth and in some instances, ensure they are not limiting the
Continue next page					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
					viability of westslope cutthroat trout populations.
Habitat needs and activities: Secure and replicate extant genetically unaltered westslope cutthroat trout populations and create meta-populations of westslope cutthroat trout in accordance with existing conservation plans. Initiate localized and watershed-scale restoration projects to achieve TMDL compliance on 303d listed streams. Develop instream flow improvements and plans in areas of need.					
Mountain Lakes	9 lakes and 65 acres	Westslope cutthroat trout, Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout	Wild/Hatchery	Put and Take/ Wild	Maintain present numbers and sizes. Consider increasing harvest or modifying stocking to reduce numbers if necessary to maintain fish growth.

Beaverhead River Drainage

MONTANA FWP



 Drainage Boundary



Area of Interest



Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

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Miles

BEAVERHEAD RIVER DRAINAGE

PHYSICAL DESCRIPTION

The Beaverhead River originates at the outlet of Clark Canyon Reservoir, an irrigation storage facility constructed by the BOR in 1964 and flows 79.5 miles before joining the Big Hole River to form the Jefferson River. Directly downstream from Clark Canyon Dam, the river flows through a canyon for 16 miles, before entering the broad, open Beaverhead Valley. At Point of Rocks, the river passes through a narrow constriction, then continues for about 20 miles through a wide, gently sloping valley to its confluence with the Big Hole River. The river drains an area of approximately 5,000 square miles. A large portion of the drainage consists of rugged mountains ranging from 9,000 to 11,000 feet in elevation. The river elevation at the dam outlet is 5,450 ft, and at the mouth is 4,600 ft. Major tributaries entering the river in downstream progression are: Grasshopper, Rattlesnake and Blacktail Deer creeks, and the Ruby River.

FISHERIES MANAGEMENT

The Beaverhead River basin contains fish species common to Southwestern Montana. These species include: rainbow trout, brown trout, brook trout, hybrid westslope cutthroat trout, westslope cutthroat trout (primarily in isolated tributaries), mountain whitefish, burbot, common carp, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker.

Although the Beaverhead River basin was historically stocked with hatchery fish, stocking in the rivers and streams was discontinued by the early 1970s, and wild trout management philosophies were initiated. Between the 1930s and 1960s, the Beaverhead River was stocked with rainbow trout, cutthroat trout (undesignated as to which sub-species), and brown trout. Arctic grayling have also been stocked into the Ruby River basin during the late 1990s and the early 2000s as part of a FWP restoration program. The stocking was discontinued in 2002, and no natural reproduction has been subsequently detected through annual sampling. Rainbow trout have been stocked annually into Clark Canyon Reservoir since 1964.

The Beaverhead River is managed under Central District Standard regulations for the entire river with a few exceptions. Only one rainbow trout may be counted in the combined trout limit, and angling is closed from Clark Canyon Dam to Pipe Organ Bridge from 1 December until the third Saturday in May.

Angling pressure is high on the Beaverhead River downstream from Clark Canyon Dam. Angling effort has varied from 14,574 angler days in 2001 to 38,706 angler days in 2009. On average, over half of the angler days logged on the Beaverhead River are from non-resident anglers.

Twelve mountain lakes exist within the Beaverhead River basin that are managed as trout fisheries. Management of these lakes varies from periodic hatchery stocking to wild self-sustaining fisheries.

HABITAT

Throughout much of the Beaverhead River's length, it is confined to a single channel. Mean channel widths range from about 83 feet near the dam to about 93 feet near the mouth. The gradient is gentle, averaging 12 feet per mile. Willow is the dominant bank vegetation. In the upper river, the streambed consists primarily of rubble, gravel and sand. In addition to the above, silt is a common component of the streambed in the lower river. Fish cover primarily consists of submerged and overhanging bank vegetation, undercut banks, and long, deep pools.

Clark Canyon Reservoir and irrigation diversions affect the flow pattern of the Beaverhead River. Prior to the construction of the reservoir, much of the lower river was severely dewatered during the summer irrigation season. In general, reservoir management has resulted in higher flows in the lower river during the historically low flow months of May, July, August and September. However, much of the lower 64 miles still suffer from dewatering. In recent years, sections of the lower river have been totally dry. Massive withdrawals of irrigation water have virtually eliminated high water flows in the lower river. During periods of drought, the upper river is now severely affected by low flow releases during the non-irrigation season when water is being stored for the following year.

FISHING ACCESS

The Beaverhead River primarily flows through private lands. Access to the river is readily obtained through some private lands, publicly owned access sites, and at bridge crossings. Floating is popular during the fishing and waterfowl seasons.

FWP administers seven Fishing Access Sites on the Beaverhead River between Clark Canyon Dam and Dillon, Montana. Opportunities for developing additional Fishing Access Sites downstream of Dillon are a high priority.

SPECIAL MANAGEMENT ISSUES

Montana Fish, Wildlife & Parks works closely with the BOR on operations of Clark Canyon Dam, in particular concerning the need for greater overwinter flows downstream of the dam.

Given the popularity of the Beaverhead River, angling is managed with social rules (regulations) to minimize crowding issues. These rules prohibit angling by non-resident anglers and outfitters during particular times of the year and in specific sections.

The Beaverhead River drainage is home to several conservation populations of westslope cutthroat trout providing opportunities to conserve this native species in the drainage. The long-term goal of cutthroat conservation in the Beaverhead is to have approximately 20% of the historically occupied habitat restored to secure conservation populations of cutthroat trout (see Part 1: Trout: Westslope and Yellowstone Cutthroat Trout for details).

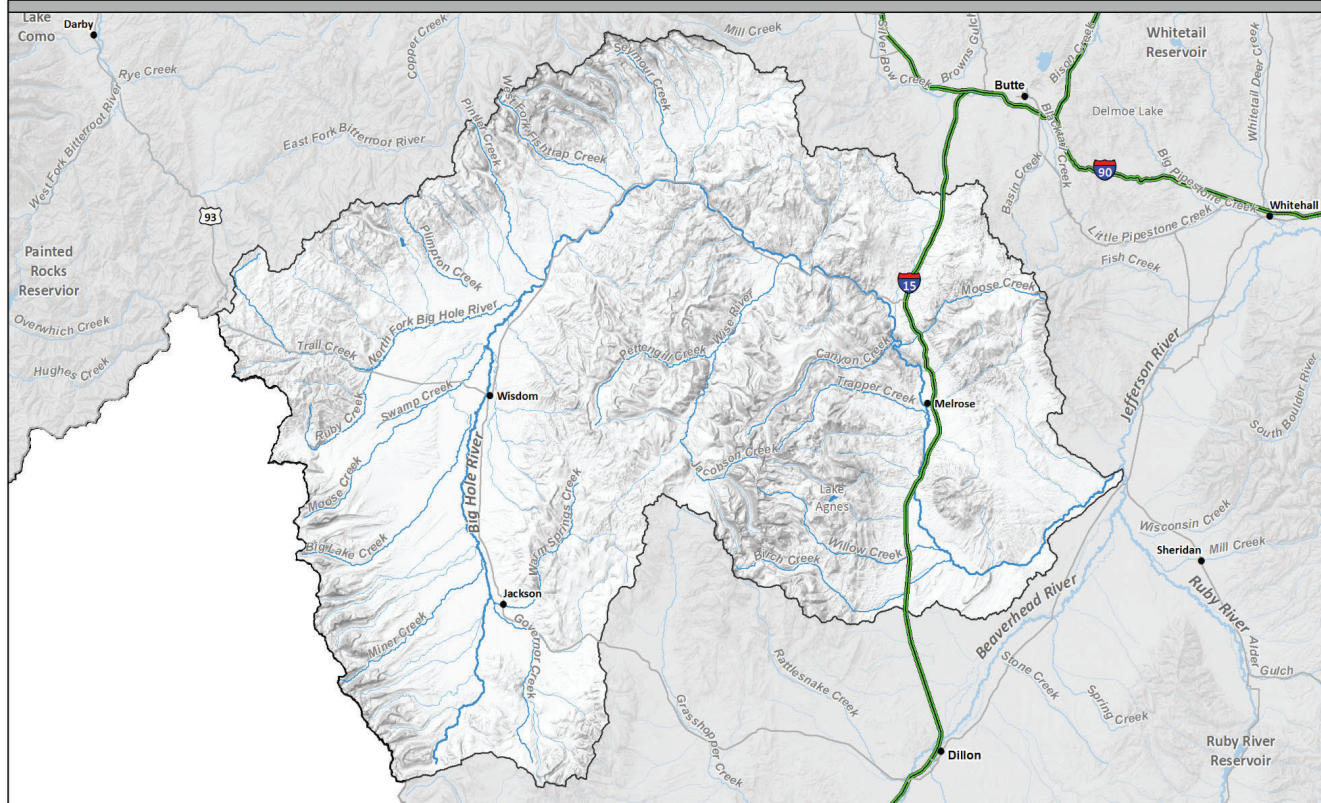
FISHERIES MANAGEMENT DIRECTION FOR THE BEAVERHEAD RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Beaverhead River	75 miles	Brown trout, Rainbow trout	Wild	Quality	Actively manage harvest, flows, and habitat to attain brown trout populations with 20% and rainbow trout populations with 35% of fish over 18” in the upper tailwater section (Clark Canyon Dam to Pipe Organ FAS). Manage to support upper tailwater goals in lower tailwater (Pipe Organ FAS to Barretts Diversion). Maintain present numbers and sizes downstream of Barretts Diversion.
		Mountain whitefish (N)	Wild	General	Continue to manage harvest to support viable populations.
Habitat needs and activities: Develop an instream flow and harvest management plan that optimizes fisheries benefits and irrigation needs to secure 1) improved winter flows upstream of Barretts Diversion and 2) improved summer flows downstream of Barretts Diversion. Release flushing flows to convey fine sediment through the reach between Clark Canyon Dam and Barretts Diversion and reduce or eliminate the effects of sediment delivery from the North Fork of Clark Canyon Creek.					
Beaverhead River Drainage Tributaries	491 miles	Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain or create viable, genetically unaltered, self-sustaining populations.
		Hybridized cutthroat trout, Rainbow trout, Brown trout, Brook trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Modify as necessary to ensure they are not limiting the viability of westslope cutthroat trout populations.
Habitat needs and activities: Secure and replicate extant genetically unaltered westslope cutthroat trout populations and create meta-populations of westslope cutthroat trout in accordance with existing conservation plans. Initiate localized and watershed-scale restoration projects to achieve TMDL compliance on 303d listed streams. Develop instream flow improvements and plans in areas of need.					

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Poindexter Slough	6 miles	Brown trout, Rainbow trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth.
Habitat needs and activities: Execute flow management plan that optimizes fisheries benefits and irrigation needs to 1) maintain minimum instream flows during summer, 2) release periodic flushing flows to convey fine sediment through the system and, 3) maximize reliance on accreted flows to enhance the spring creek character of Poindexter Slough to the extent possible.					
Mountain Lakes	12 lakes, 135 acres	Westslope cutthroat trout, Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout,	Wild/ Hatchery	Put and Take/ General	Continue to manage stocking and harvest to maintain fish sizes and numbers.

Big Hole River Drainage

MONTANA FWP



 Drainage Boundary



Area of Interest



Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

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Miles

BIG HOLE RIVER DRAINAGE

GENERAL DESCRIPTION

The Big Hole River originates in the outlet of Skinner Lake at an elevation of 7,340 ft in the Beaverhead Mountains of southwest Montana. From its modest beginnings, the river gathers volume and velocity due to numerous tributaries along its 115 mile course until its confluence with the Beaverhead River near Twin Bridges at an elevation of 4,600 ft. The Big Hole drainage encompasses approximately 2,476 square miles. The river drains the Beaverhead Mountains on the west and the south side the Anaconda-Pintler Range on the north. The river also collects water from the East and West Pioneer Mountains which includes the largest tributary to the Big Hole, the Wise River. The average annual discharge of the river recorded at Melrose since the early 1900s is 1,117 cfs. The river is not dammed although there were significant attempts in the 1960s to construct a dam downstream of the town of Glen at the "Notch." From the high mountain meadows of its headwaters to the cottonwood bottoms of the lower river, the Big Hole is free-flowing and one of the most scenic rivers in Montana.

Major tributaries to the Big Hole River include the Wise River and the North Fork Big Hole River. There are 106 named high mountain lakes in the Big Hole Drainage, as well as low-land lakes such as Mussigbrod, Miner, Twin and Pintler Lakes which are accessible by vehicle and have native components to their fisheries. Outdoor recreation and angling in particular are important activities that occur in the Big Hole. The river receives significant angling pressure, particularly in the middle and lower reaches. Approximately half of this fishing pressure is from non-resident anglers. There many outfitters in local communities and from Butte, Dillon, Twin Bridges and Ennis that frequent the Big Hole and contribute to the local economy. Because of the importance of agriculture in the valley and the importance of irrigation, the river and many of its tributaries can become dewatered, particularly in dry years. One of the more recent changes that has occurred on the Big Hole is the dividing of larger ranches, particularly in the middle and lower reaches of the river, into smaller parcels including subdivisions and the development of seasonal housing. Such developments have been the cause of concern for the fisheries and river functions because large, expensive homes are being constructed in areas of the river prone to natural channel migration and as the river approaches homes, bank stabilization is often proposed.

In recent years there has been substantial interest in protecting the Big Hole River, the pristine nature of the valley, its fishery and the way of life of the people that call the valley home. Groups such as the Big Hole Watershed Committee and the Big Hole River Foundation among others have collaborated with government agencies, ranchers, sportsmen and other groups to develop conservation plans and perform projects to protect and restore the natural resources of the Big Hole. Some of these major accomplishments include the Big Hole Drought Management Plan, Arctic grayling habitat restoration, and improvement of irrigation efficiency. These groups have been highly successful at using collaboration to accomplish common conservation goals.

FISHERIES MANAGEMENT

The native fishery in the Big Hole River Drainage was westslope cutthroat trout, Arctic grayling, lake trout, mountain whitefish, white, longnose and mountain sucker, Rocky Mountain sculpin, longnose dace and burbot. Today the mainstem river contains fish species common to Southwestern Montana including rainbow trout and brown trout. Mountain whitefish and other native suckers and minnows are also common, but cutthroat trout and Arctic grayling are rare. Brook trout are the most common trout species in the upper river from Jackson through Wisdom and in most tributary streams. The Big Hole is a Blue Ribbon trout fishery and its trout population trends are closely monitored. The Upper Big Hole River drainage contains one of the last known fluvial Arctic grayling population in the Lower 48 States, with fluvial Arctic grayling also occurring in the Madison, Centennial, and Ruby Rivers. Active conservation programs are ongoing to enhance habitat conditions for this unique species in the Big Hole River. Mussigbrod, Miner and Pintler lakes have self-sustaining populations of Arctic grayling that are assumed to be native. Burbot are common in the river, some tributary streams and lower elevation lakes. Twin Lakes also has a native population of lake trout. There are 106 mountain lakes in Big Hole that contain fisheries. These fisheries include rainbow, brook, Yellowstone cutthroat, westslope cutthroat and golden trout, hybrids between rainbow and cutthroat trout, Arctic grayling and longnose suckers.

Common to many Southwestern Montana rivers, fish were stocked in the Big Hole River beginning in the early 1900s into the late 1970s when wild trout management philosophies were instituted. Prior to 1974 the Big Hole received annual plants of catchable size hatchery rainbow trout similar to most rivers of the region. Research by the Department on the Madison River and Odell Creek in the early 1970s demonstrated that these hatchery plants depressed trout numbers and that these rivers could support higher trout populations based on a wild trout fishery without hatchery support. In 1974, the stocking of hatchery trout was virtually eliminated in the Big Hole in favor of wild trout management. The results of that action were an increase in both rainbow and brown trout abundance to more than twice their numbers achieved with stocking despite a substantial increase in angling pressure. Species which were stocked into the Big Hole River include rainbow trout, Arctic grayling, brown trout, kokanee salmon, and undesignated cutthroat trout. Arctic grayling have been stocked into Rock Creek, Governor Creek, Wise River and in Trail Creek in the upper Big Hole using remote streamside incubators. Similarly, westslope cutthroat trout have been stocked into tributary streams of the Big Hole using remote site incubators as part of efforts to conserve this native species.

Many mountain lakes were stocked with trout and grayling in the early 1900s. Active stocking of mountain lakes in the Big Hole still occurs in lakes that do not support natural reproduction. Of the 106 lakes that contain fish, 30 are supported through active stocking while the rest are supported by natural reproduction. Fish stocking in alpine lakes in the Big Hole is done on a biannual basis and is performed primarily using a helicopter. Prior to 2006, Yellowstone cutthroat trout were the primary species stocked into mountain lakes, but since then the native westslope cutthroat trout has been stocked instead. Four lakes in the Big Hole drainage are currently stocked with golden trout.

Fishing regulations on the Big Hole River are complicated and diverse. In 1981 the Big Hole River from Divide to Melrose was placed under special regulations including a slot limit where trout from 13-22 inches had to be released and anglers were allowed to keep only 3 fish less than

13 inches and 1 fish over 22 inches. Angling gear was also restricted to flies and artificial lures. The public supported these regulations because their thought was that harvest was negatively affecting the numbers of larger fish in this reach of river. The remainder of the river upstream and downstream of this reach remained under the Central Fishing District standard limit of 5 fish with only 1 fish over 18 inches. In 1986 the same regulations as previously adopted for the Divide to Melrose section were also adopted for the Dickie Bridge to the Divide section of the river. After adoption of these regulations, trout numbers increased but quickly plateaued within 3-5 years. The slot limit for trout was dropped in the early 2000s for the Dickie Bridge to Melrose section, but the artificial lures only rule remains. The river from its confluence with the Beaverhead River to Dickie Bridge is closed from December 1 through the third Saturday in May to the harvest of trout, but there is an extended season for whitefish during the winter. Trout harvest is allowed year-round upstream of Dickie Bridge.

Many of the current fishing regulations on the Big Hole are associated with social issues (crowding and conflict between residents and non-residents or between residents and outfitters) and have little biological basis. Specific sections of the river are closed each day of the week from the third Saturday in May through Labor Day to outfitting and sections are closed to non-resident float fishing on the weekend days. Upstream from Dickey Bridge, harvest of trout is encouraged to help minimize impacts to Arctic grayling, and no size restriction is in place on the combined trout limit.

Angler use of the Big Hole River is high. Over the past decade estimates have ranged from 33,121 angler days in 2001 to 77,579 angler days in 2009. Use of the Wise River has varied over the last decade from a low of 2,412 angler days in 2007 to a high of 4,322 angler days in 2009.

HABITAT

Irrigation withdrawal within the Big Hole River drainage can cause periods of low flow and high water temperatures, which can be stressful to fish populations. Sections of the river are listed as impaired by the Montana Department of Environmental Quality because of high stream temperatures. Irrigation practices can also lead to reduced habitat connectivity (channel-wide pin and plank diversions) and entrainment (loss of fish in irrigation ditches). To address low flows and high temperatures and the effects they have on the fishery, the Big Hole Watershed Committee working cooperatively with water users has adopted a voluntary drought management plan with specific stream flow and temperature triggers. This plan is aimed at maintaining minimum flows and asking water users to voluntarily reduce withdrawals from the river to improve flows. There are multiple drought management sections on the Big Hole River with specific flow and temperature triggers. When those triggers are met water users are asked to reduce their water use and angling is also restricted. Those currently enrolled in the Candidate Conservation Agreement with Assurances (CCAA) and have completed an approved Site-Specific Plan are required to comply with reductions in diversions as stated in each individual plan. Landowners that have not completed Site-Specific Plans reduce irrigation diversions on a temporary agreement until the Site-Specific plan is completed or approved. The reduction in water use by irrigators and municipalities has resulted in increased river flows during drought conditions.

Land management activities in the Big Hole River basin (grazing, willow removals, etc) have caused problems with stream form and function, as well as stream shading. Because the Big

Hole River flows primarily through private land, cooperative habitat improvement projects with landowners is essential to improving fisheries habitat. To date, over 200 habitat improvement projects have been completed on private land in the Big Hole valley. These projects have been focused primarily in the upper valley and have improved riparian health, instream flows, and habitat connectivity and have reduced or eliminated entrainment. Through grazing and instream flow agreements, the Big Hole River and tributaries are showing healthier riparian habitat conditions and improved stream flows, especially during critical periods (spawning and late season). Replacing non-functioning irrigation infrastructure (headgates and diversions) and installing fish ladders and fish screens has improved irrigation efficiency, increased connectivity and reduced fish loss.

Streambank stabilization has significantly altered the function of the lower river, particularly downstream of Notch Bottom, and remains a significant threat to river function. In areas of the lower river with a wide floodplain, the river is prone to natural channel migration and channel evulsions, and abandonments are common. These natural channel changes are important in maintaining aquatic habitats in these types of rivers. However, when these channel changes affect irrigation water withdrawals or loss of land and potentially loss of structures, then bank stabilization is often proposed. Groups such as the Big Hole Watershed Committee and county governments are seeking a collaborative approach to ensuring natural river function and responsible development of the Big Hole Valley. The Big Hole was one of the first rivers to have a set-back rule where no structures could be built within 100 ft of the river in all four counties in the drainage. Further collaborative efforts are being made to better understand the floodplain of the river and guide future development in these areas.

The lower section of river from Notch Bottom to the confluence with the Beaverhead River is also a focus area for FWP with the hope of improving the fishery in this reach. The density of trout in this reach of river is only half of that present in the river 10 miles upstream. Studies indicate that the limiting factors affecting the fishery are suitable spawning and rearing areas and low summer flows due to irrigation withdrawal. The lack of spawning and rearing areas is likely due to the lack of tributary streams in this reach and the significant bank stabilization projects conducted over the past 50 years. Bank stabilization in this reach results in a less diverse river channel and causes less natural channel migration and fewer side channels. These side channels are important spawning and rearing areas because they often contain more complex habitats with log jams and other structure used by juvenile fish and they also contain smaller substrates suitable for spawning. Studies are being conducted to determine if it is possible to create off-channel spawning areas in the lower reach of the river utilizing existing spring creeks and irrigation systems. Also, efforts are underway to work cooperatively with landowners and irrigators and the Big Hole Watershed Committee to increase flows during summer to benefit the fishery.

FISHING ACCESS

FWP has 13 fishing access sites on the Big Hole River from Fishtrap Creek downstream. Additional federal and private (Anaconda Sportsmen) fishing access sites exist within this vicinity. Public land and public road crossings throughout the valley provides fishing access at various points.

SPECIAL MANAGEMENT ISSUES

The Big Hole River is home to one of the few native fluvial (river dwelling) grayling population in the contiguous United States. A decline in the abundance and distribution of the population was first documented in the 1980s, resulting in increased efforts to understand population dynamics, identify critical habitats, and implement conservation projects to address factors limiting the population. These efforts have been directed primarily through the Arctic Grayling Recovery Program (AGRP) and the Candidate Conservation Agreement with Assurances for Fluvial Arctic Grayling in the Upper Big Hole River (Big Hole CCAA).

The Big Hole CCAA was developed to help alleviate private property concerns associated with the potential ESA listing of Montana grayling and to generate support from private landowners to improve habitat conditions for grayling throughout the Big Hole CCAA project area. The project area includes the Big Hole River watershed from Dickie Bridge upstream to the headwaters. Under this agreement the USFWS issued FWP an ESA section 10(a)(1)(A) Enhancement of Survival Permit, which gave FWP the authority to enroll non-federal landowners within the project area. Currently there are 33 enrolled non-federal landowners who are provided incidental take coverage and regulatory assurances once they sign (along with the USFWS and FWP) a Certificate of Inclusion and a site-specific conservation plan for the enrolled property. Site-specific conservation plans are developed for each enrolled landowner by an interdisciplinary technical team made up of individuals representing the Big Hole CCAA partnering agencies (FWP, DNRC, NRCS, and USFWS). Conservation measures outlined in the Big Hole CCAA document are addressed in each site-specific plan by implementing actions that: 1) improve stream flows; 2) improve and protect the function of riparian habitats; 3) identify and reduce or eliminate entrainment threats to grayling; and 4) remove barriers to grayling migration.

In 2007, FWP, BLM, USFWS, USFS, Montana Council Trout Unlimited, Montana Chapter American Fisheries Society, Yellowstone National Park, Montana Arctic Grayling Recovery Program, the USDA Natural Resource Conservation Service, and DNRC all cosigned a Memorandum of Understanding (MOU) concerning Montana Arctic Grayling Conservation. This MOU defines responsibilities and procedures agreed to by all signatory agencies conserving conservation actions to benefit Arctic grayling in Montana.

The Big Hole is also home to more conservation populations of westslope cutthroat trout (39) than any other drainage in the upper Missouri River providing several opportunities to conserve this native species in the drainage. The long-term goal of cutthroat conservation in the Big Hole River Drainage is to have approximately 20% of the historically occupied habitat restored to secure conservation populations of cutthroat trout (see Part 1: Trout: Westslope and Yellowstone Cutthroat Trout for details).

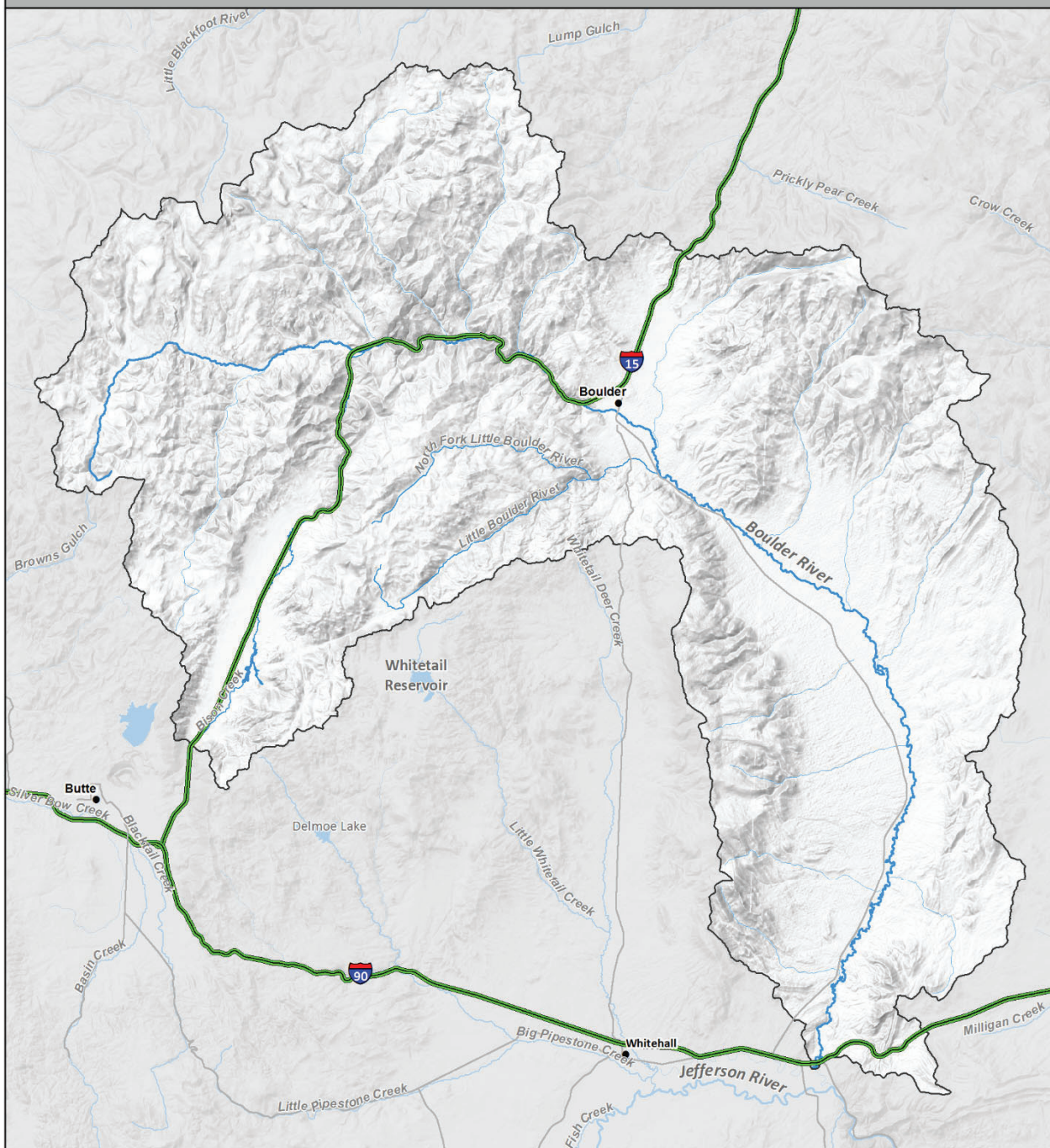
FISHERIES MANAGEMENT DIRECTION FOR BIG HOLE RIVER DRAINAGE



Water	Miles/Acres	Species	Recruitment Source	Management Type	Management Direction
Big Hole River and Tributaries - Headwaters to Dickey Bridge	93 miles	Arctic grayling(N), Lake trout(N), Burbot(N), Westslope cutthroat trout(N)	Wild	Conservation	Continue native species conservation to maintain a viable, self-sustaining population.
		Brook trout, Rainbow trout, Brown trout, Mountain whitefish (N), Hybridized cutthroat trout	Wild	General	Continue to manage to minimize potential impact on viability of Arctic grayling and secondarily for recreational angling.
Habitat needs and activities: Continue to improve stream flows, improve riparian habitats, improve stream channel form and function, continue to prevent fish entrainment into irrigation ditches.					
Big Hole River and Tributaries - Dickey Bridge to Mouth	72 miles	Brook trout, Rainbow trout, Brown trout, Hybridized cutthroat trout, Mountain whitefish(N)	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth and, in some instances, to ensure they are not limiting the viability of westslope cutthroat trout or Arctic grayling populations.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain a viable, self-sustaining population.
Habitat needs and activities: Implement and refine drought management plans to minimize impacts on fish populations. Continue to look for opportunities to increase river flows and develop spawning habitat in the Big Hole River downstream from Notch Bottom FAS. Pursue Fishing Access acquisition near High Road Bridge at Twin Bridges and between East Bank FAS and Jerry Creek FAS.					
Wise River and Tributaries	25 miles	Brook trout, Rainbow trout, Brown trout, Hybridized cutthroat trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth and, in some instances, to ensure they are not limiting the viability of westslope cutthroat trout.
Continue next page					

Water	Miles/Acres	Species	Recruitment Source	Management Type	Management Direction
		Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain a viable, self-sustaining population.
Habitat needs and activities: Develop drought management plan for Wise River. Pursue opportunities for habitat improvements in river section from Pettengill Creek to confluence with Big Hole which was affected by the Pettengill Dam breach in 1920's. Determine if Wise River could serve as possible Arctic grayling reintroduction area.					
Mountain Lakes		Westslope cutthroat trout, Hybridized cutthroat trout, Yellowstone cutthroat trout, Rainbow trout, Brook trout Golden trout	Wild/hatchery	Put and Take/ General	Monitor mountain lakes. Continue to manage stocking and harvest to maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth. Where appropriate pursue opportunities to expand golden trout into mountain lakes where such management would not conflict with cutthroat conservation.
Cutthroat Conservation Streams	350 miles	Westslope cutthroat trout (N) and other native fish species	Wild/hatchery	Conservation	Secure populations in tributary streams by removing non-native fish upstream of fish barriers and restoring westslope cutthroat trout.
Habitat needs and activities: Work with Forest Service, BLM and DRNC and private landowners on grazing regimes to minimize livestock impacts to streams. Work on water conservation projects to improve stream flows. Construct or utilize natural fish barriers to preclude non-native fish movement upstream. Remove non-native fish and restore WCT upstream.					

Boulder River Drainage

MONTANA FWP



-  Tribal Lands
-  Drainage Boundary



Area of Interest



Map Produced by:
ASP - Geographic Data Services
ISR 43965 - Nov 23, 2018

Administrative boundaries and FWP Lands data from Montana Fish, Wildlife & Parks, Helena, MT. Background Imagery from ESRI

0 5 10
Miles

BOULDER RIVER DRAINAGE

PHYSICAL DESCRIPTION

The Boulder River is formed at the confluence of its South and West Forks (elevation 6,740 feet) on the east side of the Continental divide north of Butte, Montana. It flows east to Boulder Montana, then south to its confluence with the Jefferson River near Cardwell, Montana. It is 78 miles in total length. The upper 26 percent of streams are within the boundary of the Beaverhead-Deerlodge National Forest. Major tributaries—progressing downstream—are: Lowland, Bison, Basin, Cataract and Muskrat creeks and the Little Boulder River. The Boulder River drains an area of approximately 763 square miles.

Cold Springs enters the Boulder River about 10 miles upstream of the confluence with the Jefferson River, and water quality improves significantly in this reach. In addition to supporting a quality resident fishery, large numbers of spawning brown trout from the Jefferson River enter this reach of the Boulder River during the fall.

FISHERIES MANAGEMENT

The Boulder River is managed as a wild trout fishery, emphasizing natural reproduction. The basin is also suitable for westslope cutthroat trout recovery efforts in many locations. The Boulder River drainage contains fish species common to southwestern Montana. The native species found here include westslope cutthroat trout, mountain whitefish, mountain sucker, longnose dace, longnose sucker, Rocky Mountain sculpin, and white sucker. Nonnative species are rainbow trout, brown trout, brook trout, and common carp. Hybrids of rainbow trout and westslope cutthroat trout are also found in the drainage.

Fish stocking records for the Boulder River are documented to begin in the 1920s and continued through the early 1970s when wild trout management philosophies were instituted. Beginning in the late 1920s, undesignated cutthroat trout, rainbow trout, brook trout, brown trout and Arctic grayling were stocked. Between the early 1950s and early 1970s, only rainbow trout were stocked into the Boulder River drainage.

The fishing regulations for trout in the Boulder River drainage are covered by the Central District Standard regulations with the exception of a seasonal closure in the reach of the river below Boulder Cut-Off Road (Open January 1 through September 30) to protect spawning trout (from the Jefferson River) in the lower reaches of the Boulder River. Over the past decade, angler use of the Boulder River has varied from 2,962 angler days in 2001 to 11,009 angler days in 2009. The major tributaries (East Fork Boulder, Little Boulder River, and South Fork Boulder River) receive little angling use annually.

HABITAT

The Boulder River has a mean gradient of 33.7 feet per mile. At the Beaverhead-Deerlodge National Forest boundary above Basin, the stream averages 47.4 feet in width at the spring flow levels. The river upstream from Boulder, Montana has a narrow floodplain, a high elevation and steep gradient. Riparian vegetation primarily consists of willows, alders, conifers, and to a lesser

extent, cottonwoods and aspens. The reach of river downstream from Boulder has a wider floodplain through which the river meanders, a lower elevation and a more gradual gradient. Riparian vegetation primarily consists of cottonwoods, aspens and willows.

Flows in the river depend primarily on snowpack in the mountains, although a number of large springs add to the flow in the lower valley. The major use of water from the Boulder River below Boulder, Montana is for agricultural purposes.

Extensive portions of the Boulder River have been relocated as a result of mining, agricultural, road, and railroad building activities. Portions of the upper river channel (town of Boulder to Bernice) were relocated to accommodate Interstate 15. In addition, riprapping of the banks and vegetation removal has affected other stretches.

FISHING ACCESS

Angling access is readily available in the headwaters due to the dominance of federal land ownership (USFS, BLM), and public roads located along the river upstream of Boulder provide numerous locations to gain access to the river. From the town of Boulder to the confluence with the Jefferson River, access is generally limited to county road bridges. There are no FASs administered by FWP on the Boulder River, but the Candlestick Ranch near Cardwell provides a unique access opportunity provided by Golden Sunlight Mine in coordination with FWP.

SPECIAL MANAGEMENT ISSUES

Hard rock mining for metallic minerals in the Boulder River drainage was extensive in the late 1800s and early 1900s. This past mining is still affecting the river downstream from Basin, Montana where heavy metals emanating from acid mine seeps and mill tailings cause a major water quality problem. Stream sediments in the river channel and floodplain contain high concentrations of zinc, copper and lead, extending some 25 miles downstream from the source areas. In the Boulder River downstream from the town of Basin, depressed standing crops of trout have been associated with higher metals concentrations in the river. Other studies from the 1970s showed that metals pollution and stream sedimentation were affecting the distribution and abundance of aquatic insects in the Boulder River.

The Boulder River drainage is home to several conservation populations of westslope cutthroat trout providing opportunities to conserve this native species in the drainage. The long-term goal of cutthroat conservation in the Boulder River Drainage is to have approximately 20% of the historically occupied habitat restored to secure conservation populations of cutthroat trout (see Part 1: Trout: Westslope and Yellowstone Cutthroat Trout for details).

FISHERIES MANAGEMENT DIRECTION FOR BOULDER RIVER DRAINAGE

Water	Miles/acres	Species	Recruitment Source	Management Type	Management Direction
Boulder River and Tributaries (Headwaters to Boulder)	35 miles	Brook trout, Rainbow trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth.
		Westslope cutthroat trout (N)	Wild	Conservation	Continue native species conservation to maintain or create viable, genetically unaltered, self-sustaining populations.
Habitat needs and activities: Initiate mine reclamation to improve water quality and coordinate with Forest Service activities.					
Boulder River and Tributaries (Boulder to Cold Springs)	35 miles	Rainbow trout, Brown trout, Mountain whitefish (N)	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth.
Habitat needs and activities: Continue to improve instream flow, by looking for opportunities to lease water or improve efficiency in irrigational infrastructure and methods.					
Boulder River and Tributaries (Cold Springs to Confluence with Jefferson River)	10 miles	Brown trout, Rainbow trout	Wild	General	Maintain present numbers and sizes. Consider increasing angler harvest to reduce numbers if necessary to maintain fish growth. Continue to protect spawning runs.